II. AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A computer-implemented method for performing branched rollup for shared learning competencies in a learning environment, comprising:

providing a hierarchical tree corresponding to the learning environment, wherein the hierarchical tree includes a parent node, a first branch having a first child node and a first grandchild node, and a second branch having a second child node and a second grandchild node;

providing a learning competency in the learning environment that is shared by the first grandchild node and the second grandchild node;

performing an information rollup of the first child node upon a change in state of the learning competency, and performing an information rollup of the second child node after performing the information rollup of the first child node; wherein the information rollups include communicating ~~the~~ a change in state of the learning competency to ~~the~~ a node <u>from which at least one of the first and second grandchild node depends</u>;

generating a control block for each of the first child node, the second child node and the parent node prior to the first performing step, wherein the control block for the parent node indicates that the information rollup of the first child node and the information rollup of second child node must both be performed prior to performing the information rollup of the parent node; ~~and~~

performing an information rollup of the parent node only after performing the information

rollup of the first child node and the information rollup of the second child node, eliminating

repeated rollups of the parent node, and

outputting the hierarchical tree.

2. (Original) The computer-implemented method of claim 1, further comprising:

analyzing the hierarchical tree to identify the second grandchild node as sharing the

learning competency with the second grandchild node; and

adding the second grandchild node to a list of nodes prior to performing the information

rollup of the first child node.

3. (Original) The computer-implemented method of claim 2, further comprising consulting the

list of nodes prior to performing the information rollup of the second child node.

4. (Canceled).

5. (Previously Presented) The method of claim 1, further comprising:

processing the control block for the first child node prior to performing the information

rollup of the first child node;

processing the control block for the second child node prior to performing the

information rollup of the second child node; and

processing the control block for the parent node prior to performing the information rollup of the parent node.

6. (Original) The computer-implemented method of claim 1, wherein the learning environment is implemented in a computerized environment.

7. (Currently Amended) A computerized system for performing branched rollup for shared learning competencies in a learning environment, comprising:

a list compilation system for generating a list of nodes that share a learning competency within a hierarchical tree corresponding to the learning environment;

a block generation system for generating control blocks for predecessors of the nodes in the list of nodes, wherein each of the control blocks identifies specific successors of the predecessors for which information rollups must be performed before information rollups of the predecessors can be performed; wherein the information rollups include communicating ~~the~~ a change in state of the learning competency to ~~the~~ a node from which at least one of the first and second grandchild node depends; and

a node rollup system for processing the control blocks and performing the information rollups of the predecessors after performing the information rollups of the specific successors, eliminating repeated rollups of the parent node.

8. (Original) The computerized system of claim 7, wherein the hierarchical tree comprises a parent node, a first branch having a first child node and a first grandchild node, and a second branch having a second child node and a second grandchild node.

9. (Original) The computerized system of claim 8, wherein the learning competency is shared by the first grandchild node and the second grandchild node, wherein the first child node and the parent node are the predecessors of the first grandchild node, and wherein the second child node and the parent node are the predecessors of the second grandchild node.

10. (Original) The computerized system of claim 9, wherein the information rollup of the parent node is performed only after the information rollup of the first child node and the information rollup of the second child node are performed.

11. (Original) The computerized system of claim 7, wherein the learning environment is implemented in a computerized environment.

12. (Original) The computerized system of claim 7, wherein the information rollups of the first child node, the second child node and the parent node are performed a maximum of one time for a change in state of the learning competency.

13. (Original) The computerized system of claim 7, wherein the list of nodes is generated, the control blocks are generated and processed, and the information rollups are performed upon a change in state of the learning competency.

14. (Currently Amended) A computer program product stored on a recordable medium for performing branched rollup for shared learning competencies in a learning environment, which when executed, comprises:

program code for generating a list of nodes that share a learning competency within a hierarchical tree corresponding to the learning environment;

program code for generating control blocks for predecessors of the nodes in the list of nodes, wherein each of the control blocks identifies specific successors of the predecessors for which information rollups must be performed before information rollups of the predecessors can be performed; wherein the information rollups include communicating ~~the~~ a change in state of the learning competency to ~~the~~ a node from which at least one of the first and second grandchild node depends; and

program code for processing the control blocks and performing the information rollups of the predecessors after performing the information rollups of the specific successors, eliminating repeated rollups of the parent node.

15. (Original) The computer program product of claim 14, wherein the hierarchical tree comprises a parent node, a first branch having a first child node and a first grandchild node, and a second branch having a second child node and a second grandchild node.

16. (Original) The computer program product of claim 15, wherein the learning competency is shared by the first grandchild node and the second grandchild node, wherein the first child node and the parent node are the predecessors of the first grandchild node, and wherein the second child node and the parent node are the predecessors of the second grandchild node.

17. (Original) The computer program product of claim 16, wherein the information rollup of the parent node is performed only after the information rollup of the first child node and the information rollup of the second child node are performed.

18. (Original) The computer program product of claim 14, wherein the learning environment is implemented in a computerized environment.

19. (Original) The computer program product of claim 14, wherein the information rollups of the first child node, the second child node and the parent node are performed a maximum of one time for a change in state of the learning competency.

20. (Original) The computer program product of claim 14, wherein the list of nodes is generated, the control blocks are generated and processed, and the information rollups are performed upon a change in the state of the learning competency.